

Claims

What is claimed is:

1. A method of preventing contamination in a lithographic apparatus including a projection system, comprising:

providing the lithographic apparatus including the projection system for imaging an irradiated portion of a mask onto a target portion of a substrate; and

placing a pellicle over a surface of the projection system to inhibit contamination of the surface.

2. The method of claim 1, wherein the pellicle comprises a flourine polymer.

3. The method of claim 1, wherein the pellicle comprises a fused silica.

4. The method of claim 1, including the step of:

replacing the pellicle when a scattering of an illumination source reaches a specified criteria.

5. The method of claim 1, including the step of:

illuminating the lithographic apparatus with an illumination light of a wavelength of between about 190 nm and 250 nm.

6. The method of claim 1, including the step of:

illuminating the lithographic apparatus with an illumination light of a wavelength of between about 155 nm and 190 nm.

7. The method of claim 1, wherein the surface of the projection system is at least one of a top surface and bottom surface.

8. The method of claim 2, wherein the surface is the top surface of the projection system.

9. The method of claim 1, wherein the surface is the bottom surface of the projection system.
10. The method of claim 3, wherein the projection system includes at least two lenses,
the top surface of the projection system is a top surface of a top lens, and
the bottom surface of the projection system is a bottom surface of a bottom lens.
11. A lithographic apparatus, comprising:
a projection system for imaging an irradiated portion of a mask onto a target portion of a substrate; and
a pellicle placed over a surface of the projection system to inhibit contamination of the surface.
12. A lithographic apparatus according to claim 11, wherein the pellicle comprises a fluorine polymer.
13. A lithographic apparatus according to claim 11, wherein the pellicle comprises a fused silica.
14. A lithographic apparatus according to claim 11, wherein the pellicle is replaceable.
15. A lithographic apparatus according to claim 11, including:
an illumination light of a wavelength of between about 190 nm and 250 nm.
16. A lithographic apparatus according to claim 11, including:
an illumination light of a wavelength of between about 155 nm and 190 nm.
17. A lithographic apparatus according to claim 11, wherein the surface of the projection system is at least one of a top surface and bottom surface.

18. A lithographic apparatus according to claim 17, wherein the surface is the top surface of the projection system.

19. A lithographic apparatus according to claim 17, wherein the surface is the bottom surface of the projection system.

20. A lithographic apparatus according to claim 17, wherein the projection system includes at least two lens,

the top surface of the projection system is a top surface of a top lens, and
the bottom surface of the projection system is a bottom surface of a bottom lens.

21. A lithographic apparatus comprising:
a radiation system for supplying a projection beam of radiation;
a mask table including a mask holder for holding a mask connected to a positioner for accurately positioning the mask with respect to a projection system;
a substrate table including a substrate holder for holding a substrate connected to the positioner for accurately positioning the substrate with respect to the projection system; and
a pellicle placed over a surface of the projection system to inhibit contamination of the surface,
the projection system for imaging an irradiated portion of the mask onto a target portion of the substrate.